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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,749	01/18/2000	Qinyun Peng	FDN-2604	1054

7590 02/17/2004

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EXAMINER

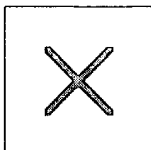
SINGH, ARTI R

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 02/17/2004

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Paper No. 012104

Application Number: 09/484,749  
Filing Date: January 18, 2000  
Appellant(s): PENG ET AL.

Dr. Walter Katz  
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 30, 2003.

**MAILED**  
**FEB 13 2004**  
**GROUP 1700**

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which directly affect or be directly affected by or have a bearing on the decision in pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

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**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

The appellant's statement in the brief that certain claims do not stand or fall together is noted; however Appellant's sets forth no arguments or reasoning as to why each and every claim should be considered an individual and separate invention.

**(8) Claims Appealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

5,518,586	MIROUS	5-1996
3,865,682	MARZOCCHI	02-1975

**(10) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2 and 4-8 are rejected under 35 U.S.C. 103 (a) as being unpatentable over USPN 5,518,586 issued to Mirous, further in view of USPN 3,865,685 issued to Marzocchi.

Appellant's claim 1 is drawn to a glass fiber mat comprising (a) by weight about 68% to about 90% of fibers, (b) about 10% to about 32% by weight of an organic resin binder and (c) applied to the surface of the glass mat about 0.001% to about 20% by weight of an adhesion modifier which is non-reactive with said surface of glass mat, and said adhesion modifier is a polysiloxane. Claim 2 further limits the amount of adhesion modifier to be about 0.01-10%. Claim 4 further limits the polysiloxane to be a polyalkyl siloxane, a polyaryl siloxane, a polyalkylaryl siloxane or a derivative thereof. Claim 5 further limits the polysiloxane to be polydimethyl siloxane or a derivative thereof. Claim 6 further limits the polysiloxane to have a molecular weight of >600. Claim 7 further limits the

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organic resin binder to include a urea-formaldehyde resin. And lastly, Claim 8 further limits the glass fibers of the mat to be about 3mm to about 130 mm, and having a diameter of about 5 micrometers to about 25 micrometers.

The invention of Mirous is directed to high tear strength glass mats comprising a urea-formaldehyde resin binder applied to fibrous glass mats and used in making roofing shingles (column 2, lines 60-65). The resin is further modified by additives and cross linking agents (abstract and column 2, lines 6-24). Presently, the Examiner is equating the surface to which the adhesion modifier is applied to, as the resin binder surface. The fibers generally have a length of 0.25 to 3 inches (.6-4.7 mm) and a diameter of 3 to 20 microns (column 3, lines 55-63). In column 5, lines 49-54 the instant patent discloses that the finished glass mat composite contains between 60% to 90 % by weight glass fibers and between 10 to 40% of a resin binder. Mirous does not teach the use of the specific polysiloxane as its additive.

Marzocchi discloses the use of silanes, including datives of those sought by Appellant, which is the polysiloxane being a polyalkyl siloxane, a polyaryl siloxane, a polyalkylaryl siloxane or a polyether siloxane or a derivative thereof in glass fiber reinforced products. Hence, a person having ordinary skill in the art at the time the invention was made would have found it obvious to have added the specific polysiloxane of Marzocchi to the binder of Mirous. Motivation to do so would be to improve the moisture resistance of the glass fiber mat as the final product is a roofing shingle.

With regard to the ASTM D-3462, July 10 1977 Ed., test standard, the Examiner takes the position that if structurally and chemically the same materials are being used, then presumably one would end up with the same properties of tear strength that Appellant seeks.

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**(11) Response to Argument**

In Appellant first paragraph in the Argument section, Appellant states that Mirous is directed to only a process of making glass fiber mats , which require a binder to hold the mat together and is usually a urea-formaldehyde, and that by adding the anionic phosphate to the urea formaldehyde resin, high tear strength mats- per se could be prepared; and that Mirous clearly does not disclose the use of polysiloxane as their modifier; and that in doing so Mirous came up with the invention and Appellant is only picking up where Patentee left off. To this the Examiner contends that, a combination rejection was provided which showed that Mirous only lacked the teaching of the specific polysiloxane, and met each and every other limitation that was claimed. And as the Mirous reference lacked the teaching of the exact silanes, a skilled artisan must look to the prior art for the limitation that is lacking, and thus the Examiner came up with the Marzocchi reference, which teaches the use of commonly known silanes with glass fiber mats and the composites formed therefrom, in fact Marzocchi teaches the exact silanes that Appellant lists in claim 4 and 5, as is also shown in the rejection above. To further the point substituting one known additive for another well known additive, which is applied to the same glass fiber mats within the same resin to make the same product having the same desired properties of high tear strength is within the level one of ordinary skill in the art.

Appellant further traverses that Marzocchi is seen only to describe a composition for use in the treatment of glass fiber mats and that the use of the combination of resin and additive chosen by Marzocchi would have to enter into a chemical bond for the for such a combination to work and thus would not meet Appellant's limitation of being "non-reactive". To this the Examiner points out column 3, lines 54-59 of the Marzocchi

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reference which states: "the combination of the modified resin and the elastomer latex can then be used in the treatment of glass fibers whereby the organo-silicon component serves to forms a more secure bond of the composition of the surface of the glass fiber surfaces." This is stating that there isn't a chemical bond and is actually n adhesion bond which would in turn enable the fibers to be "pulled out and not torn", in almost the same way that Appellant is desiring. Furthermore, how would a skilled artisan be able to tell the difference once the final product was produced? Appellant's arguments that their invention starts where Mirous and Marzocchi left off is still unconvincing and thus the rejections were maintained. For the above reasons, it is believed that the rejections should be sustained.





Respectfully submitted,

Ms. Arti Singh  
Primary Examiner  
Art Unit 1771

ars  
February 9, 2004

Conferees:

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